III. Supplement to a Paper, read February 17, 1859, "On the Influence of White Light, of the different Coloured Rays and of Darkness, on the Development, Growth, and Nutrition of Animals*." By Horace Dobell, M.D. &c. Communicated by James Paget, Esq. Received September 23, 1859.

The apparatus used in the following experiments, was described in my Paper; but in the present instance, only two of the cells were employed, viz. that exposed to ordinary white light, and that from which all light is excluded. In order more effectually to prevent the possible admission of light, the following precautions were adopted with the dark cell:—1. The perforated zinc floor was covered with thick brown paper. 2. The under surface of the lid was lined with black cloth, to secure accurate adjustment when shut. 3. The opaque black glass was covered with an additional coat of black oil-paint. 4. The lid was never opened in any light except that of a candle or of gas.

March 20th, 1859.—A number of ova of the Silkworm (*Bombyx mori*), all of the same age, were placed in each of the two cells. No change was observed until *May 18th* (sixty days after the commencement of the experiments), when one larva emerged from the ovum in each cell; and during twelve days, larvæ continued to emerge in the light and in the dark at the same rate.

June 9th.—Sixteen larvæ, as nearly as possible of the same size, were selected in each cell, and the rest removed. The experiments then proceeded with these thirty-two individuals, and no death occurred from first to last.

* Proceedings of the Royal Society, vol. ix. p. 644.

The following Table shows the day on which each larva began to spin; the day on which the perfect insect escaped from the pupa; and hence the number of days occupied by the metamorphosis.

Light.			Darkness.		
Day of beginning to spin.	Day of escape of the Moth.	Number of days occupied by metamorphosis.	Day of beginning to spin.	Day of escape of the Moth.	Number of days occupied by metamorphosis.
July 1	July 18	18 days inclusive	June 30	July 18	19 days inclusive
„ 2	„ 19	18 „ „	„ 30	„ 18	19 „ „
„ 2	„ 19	18 „ „	„ 30	„ 18	19 „ „
„ 2	„ 18	17 „ „	„ 30	„ 18	19 „ „
„ 2	„ 18	17 „ „	„ 30	„ 21	22 „ „
„ 2	„ 19	18 „ „	July 1	„ 18	18 „ „
„ 2	„ 19	18 „ „	„ 1	„ 18	18 „ „
„ 3	„ 19	17 „ „	„ 2	„ 18	17 „ „
„ 3	„ 21	19 „ „	„ 2	„ 19	18 „ „
„ 4	„ 20	17 „ „	„ 2	„ 20	19 „ „
„ 4	„ 20	17 „ „	„ 2	„ 19	18 „ „
„ 4	„ 20	17 „ „	„ 2	„ 20	19 „ „
„ 4	„ 21	18 „ „	„ 2	„ 21	20 „ „
„ 4	„ 21	18 „ „	„ 3	„ 21	19 „ „
„ 5	„ 21	17 „ „	„ 3	„ 20	18 „ „
„ 6	„ 24	19 „ „	„ 4	„ 21	18 „ „

From this it is seen that the mean period occupied by the metamorphosis in the *darkened cell* was eighteen days fifteen hours, and in the *light cell* seventeen days sixteen hours.

The longest and shortest periods in the *darkened cell* twenty-two days and seventeen days, in the *light cell* nineteen days and seventeen days.

June 9th.—On selection of sixteen of the largest larvæ from the inhabitants of each cell, it was noted that, when sixteen were selected from the *darkened cell* and several of *similar size* removed, only four could be found as large in the *white cell*, the remaining twelve selected were therefore of a rather smaller size. This difference in the two cells became less obvious afterwards, but, throughout the experiments, there was a slight difference of size in favour of the darkened cell.

With these exceptions, no difference could be detected between the results obtained in the cell from which light was completely excluded and in that exposed to its full influence.

The larvæ, the silk produced, and the moths from the two cells,

when placed side by side, could not be distinguished from one another.

The ova were of the same colour when first deposited, and underwent the same changes of appearance, at the same time, in the dark and in the light.

So far, therefore, as the direct agency of light is concerned in the development, growth, nutrition, and coloration of animals, the results of these experiments closely correspond with those already recorded in my Paper.

IV. "On the Effects produced in Human Blood-corpuscles by Sherry Wine, &c." By WILLIAM ADDISON, Esq., F.R.S., Fellow of the Royal College of Physicians, London. Received September 10, 1859.

(Abstract.)

The author has found that when a small drop of fresh blood is placed beside a similar drop of sherry wine on a slip of glass, and viewed with the microscope, after being covered as usual with a thin piece of glass, certain changes are seen to take place in the blood as it mingles with the wine, which are thus described:—

"In those parts where the wine is mingling with the blood—at the outer edges of the mass—various altered corpuscles will be seen. They float in the fluid, separated from each other, having now no longer any disposition to adhere together in rolls. Their outlines are altered, and sundry markings appear in their interior. After a short time—perhaps ten minutes, sometimes sooner—numerous corpuscles will be observed throwing out matter from their interior; two, five, or ten molecular spots fringing their circumference. Some of these molecules grow larger and seem coloured; others of them elongate into tails or filaments, which frequently attain to an extraordinary length, and wave about in a very remarkable manner. They all terminate, at the extremity farthest from the corpuscle, in a round globular enlargement. A single corpuscle may very frequently be seen with five or six of these tails.

"During the observation of these phenomena, numerous molecular particles are seen continually passing from the corpuscles; they